

Location/Identification

MINFILE Number:	092L 012	National Mineral Inventory Number:	092L2 Au8
Name(s):	<u>MOUNT ZEBALLOS</u> FARRIS, B.X. (L.1754), J. (L.1757), SPUD (L.1028), S.B. (L.1756)		
Status:	Past Producer	Mining Division:	Alberni
Mining Method	Underground	Electoral District:	North Island
Regions:	British Columbia, Vancouver Island	Forest District:	Campbell River Forest District
BCGS Map:	092L006		
NTS Map:	092L02W	UTM Zone:	09 (NAD 83)
Latitude:	50 00 44 N	Northing:	5542288
Longitude:	126 48 35 W	Easting:	656924
Elevation:	610 metres		
Location Accuracy:	Within 500M		
Comments:	Adit at centre of Lot 1754 on the Mt. Zeballos vein is located 1.5 kilometres west of Spud Creek, 4.5 kilometres northeast of Zeballos.		

Mineral Occurrence

Commodities:	Gold, Silver, Copper, Lead, Zinc		
Minerals	Significant:	Chalcopyrite, Galena, Sphalerite, Pyrite, Arsenopyrite	
	Significant Comments:	Gold, silver mineralogy not known.	
	Associated:	Quartz, Calcite	
	Alteration:	Epidote, Sericite, Pyrite, Carbonate	
	Alteration Type:	Sericitic, Epidote, Carbonate	
	Mineralization Age:	Unknown	
Deposit	Character:	Vein	
	Classification:	Mesothermal, Epithermal, Epigenetic	
	Type:	I01: Au-quartz veins, I06: Cu+/-Ag quartz veins	
	Shape:	Tabular	
	Dimension:	300x300x0 metres	Strike/Dip: 044/80E
	Comments:	Mount Zeballos vein strikes 043 to 045 degrees, dips 90 to 70 degrees east; vein width is 6 centimetres.	

Host Rock

Dominant Host Rock:	Volcanic		
Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Lower Jurassic	Bonanza	Undefined Formation	-----
Eocene	-----	-----	Catface Intrusions
Isotopic Age	Dating Method	Material Dated	
200 Ma	Fossil	Mollusks	
38 +/- 14 Ma	Potassium/Argon	Biotite	
Lithology:	Feldspar Crystal Tuff, Dacite Tuff, Dacite Fragmental Lava, Hornblende Andesite Flow, Mafic Dike, Feldspar Porphyry Dike, Breccia		
Comments:	Mollusks from Quatsino Sound; biotite from Zeballos (Geological Survey of Canada Paper 74-8).		

Geological Setting

Tectonic Belt:	Insular	Physiographic Area:	Vancouver Island Ranges
Terrane:	Wrangell, Plutonic Rocks		

Metamorphic Type: Contact
Grade: Amphibolite

Inventory

Ore Zone: SAMPLE **Year:** 1944
Category: Assay/analysis **Report On:** N
NI 43-101: N
Sample Type: Bulk Sample

Commodity	Grade
Silver	6.0200 grams per tonne
Gold	12.6700 grams per tonne

Comments: Average grade of tonnage mined, 1939 to 1944.

Reference: Geological Survey of Canada Paper 272, page 62.

Summary Production

		Metric	Imperial
	Mined:	74,268 tonnes	81,866 tons
	Milled:	51,540 tonnes	56,813 tons
Recovery	Gold	946,589 grams	30,434 ounces
	Silver	444,399 grams	14,288 ounces
	Lead	12,726 kilograms	28,056 pounds
	Copper	2,408 kilograms	5,309 pounds

Capsule Geology

The Mount Zeballos past producer lies in the Zeballos gold camp, an area underlain by a Lower Jurassic Bonanza Group Island arc sequence of basaltic to rhyolitic volcanic rocks. Conformably underlying the Bonanza rocks are limestones and limy clastics of the Quatsino and Parson Bay formations, and the tholeiitic basalts of the Karmutsen Formation, all belonging to the Upper Triassic Vancouver Group. Dioritic to granodioritic Jurassic plutons of the Zeballos intrusion phase of the Island Intrusions have intruded all older rocks. The Eocene South Zeballos stock, a quartz diorite phase of the Catface Intrusions, is spatially related to the areas gold-quartz veins. Bedded rocks are predominantly northwest striking, southwest dipping, and anticlinally folded about a northwest axis.

The Mount Zeballos vein and the nearby parallel Farris vein are in narrow but well defined shear zones striking 044 degrees and dipping 90 to 70 degrees east. The veins occur in an assemblage of interbedded Lower Jurassic Bonanza Group tuffs and flows with a few crosscutting narrow greenstone dykes and conformable hornblendite dykes.

Stevenson, in Bulletin 27, separates the tuffs into a feldspar- rich crystal tuff as recognized at the 2250 portal, and feldspar- poor and dacite tuffs, into which the 1900 portal was driven.

Flows are of hornblende-andesite composition and include minor tuff and fine breccia. The breccia ranges from 0.3 to 3.6 metres in width and exhibits strong apple green epidote alteration. Strongest alteration occurs in a zone of large elliptical masses, up to 30 centimetres, of white dacite fragmental lava set in a matrix of fragmental green andesite. Parallel quartz-eyes occur in the dacite. Dacite and feldspar tuffs to the north are altered to lime-silicate rocks. They lie in closer proximity to the quartz diorite South Zeballos stock, which at its closest point lies 2.0 kilometres east of the veins.

Bedded rocks strike northwest and dip southwest at about 45 degrees. The veins occupy shear zones enveloped by bleached host rock. Alteration minerals are sericite, carbonate and coarse pyrite. The Mount Zeballos Vein is locally dichotomous where the main shear zone parallels a second break, 0.3 to 1.2 metres away. A few cross- faults displace the vein by up to 60 centimetres. Vein material consists of ribbon quartz, 5 to 30 centimetres wide but averaging about 6 centimetres. Where the vein is narrow, no ribboning is present, and vein material is brecciated where a change in strike occurs. Coarse calcite or ankerite occur locally in vein centres and is more abundant in the upper levels. Secondary grey cloudy quartz and coarse cubic pyrite are evidence of alteration within the veins. Later generations of quartz veins and calcite veinlets overprint the main vein. Defining the quartz ribbons are fine aggregates of arsenopyrite and pyrite.

Towards the southwest and in the stope faces the vein appears to pinch to near zero but the structure persists. A 2.5 to 10 centimetre wide zone of

gouge, calcite and lesser amounts of quartz occurring to the southwest (Lot 1757, J claim) apparently on strike with the Mount Zeballos Vein, may represent the continuation of the structure.

The parallel Farris Vein lies 150 metres southeast of the Mount Zeballos Vein. It is 1.0 to 7.5 centimetres wide and contains discontinuous 1.0 centimetre wide ribbons of quartz. For much of its length the shear zone consists of a less than 2.5 centimetre wide rusty gouge seam with no quartz. Wallrock for up to 0.6 metres distance is sheared and fractured.

The "J Vein", 0.6 kilometres southwest of and on strike with the Farris Vein, may represent its continuation. This vein strikes 058 degrees and dips vertically, and has been traced by surface stripping and underground workings for 145 metres. The 5.0 to 25.0 centimetre wide vein contains quartz, pyrite and arsenopyrite and is hosted in green andesite tuff cut by two north striking feldspar porphyry dykes.

The average grade for mined ore was 12.67 grams per tonne gold, 6.02 grams per tonne silver, with minor values in copper, lead and zinc. Between 1939 and 1944, the Mount Zeballos Mine produced 946,589 grams of gold, 444,399 grams of silver with 2408 kilograms of copper and 12,726 kilograms of lead.

Bibliography

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GSC EC GEOL 1-1947

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Date Coded: 1985/07/24

Coded By: BC Geological Survey (BCGS)

Field Check: N

Date Revised: 1989/03/02

Revised By: Wim S. Vanderpoll(WV)

Field Check: N